June 21, 2011 (Tuesday) 55th EOQ Congress

KEMPINSKI HOTEL CORVINUS **Erzsébet tér 7-8, Budapest V.**

BALLROOM **Tuesday 9:00 – 10:30**

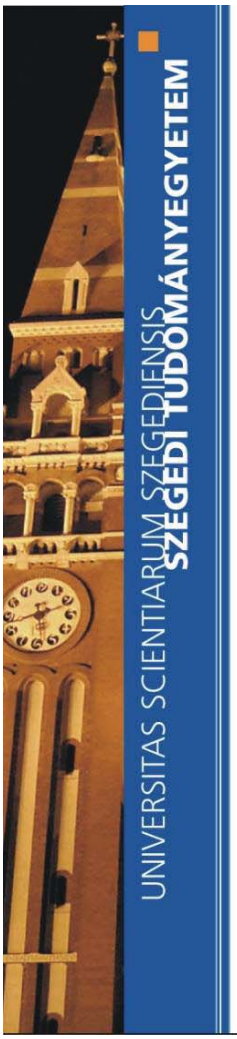
8.2. OPENING PLENARY SESSION 11:00 – 12:30

Session Chair: ***Pál Molnár****, President, Hungarian National Committee for EOQ and Professor at the University Szeged, Congress Chairman, Hungary*

12.00 Innovation and Quality
Gábor Szabó, President, Hungarian Innovation Association and Rector, University Szeged, Hungary

Szabó, Gábor (Hungary)

Gábor Szabó received his MS and PhD degrees in physics from JATE University, Szeged, Hungary, in 1978 and 1981, respectively. From 1978 to the present he has been working at the University of Szeged where he has been a full professor in the Department of Optics and Quantum Electronics since 1994. Since 2010 he has been the rector of the University of Szeged. He has also visited scientists at both Max Planck Institute, Göttingen, Germany, and Rice University, Houston, Texas. Dr. Szabó is a member of the Hungarian Physical Society, he is the chairman of the Hungarian Association for Innovation, and has been a member of the Hungarian Academy of Sciences beginning from 2010. His research activities include photoacoustic spectroscopy, ultrafast laser spectroscopy, generation of femtosecond pulses, nonlinear optics, optimum control of quantum systems, medical applications of lasers.

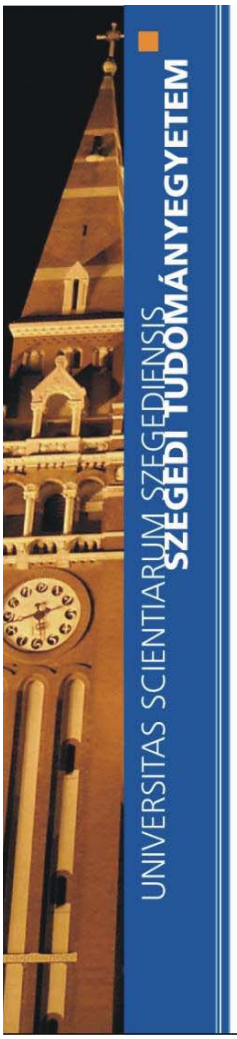


Innovation and quality

Gabor Szabo
President, Hungarian Association for Innovation,
Rector, University of Szeged

MAGYAR INNOVÁCIÓS SZÖVETSÉG MISZ

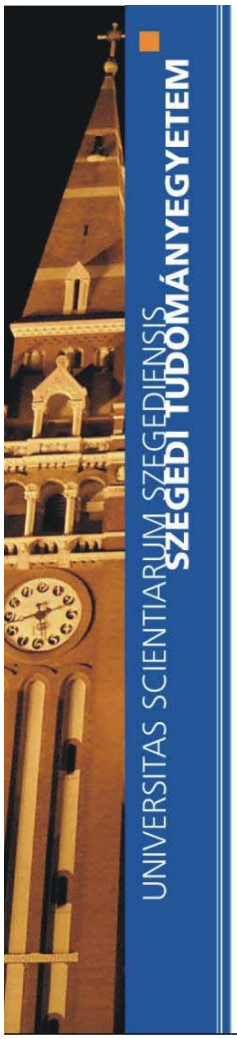
UNIVERSITAS SCIENTIARUM SZEGEDIENSIS · SZEGEDI TUDOMÁNYEGYETEM ·



What is innovation?

„Innovation is the ability to take new ideas and translate them into commercial outcomes by using new processes, products or services in a way that is better and faster than the competition."

Reviewing Community innovation policy in a changing world
European Commission (2009)

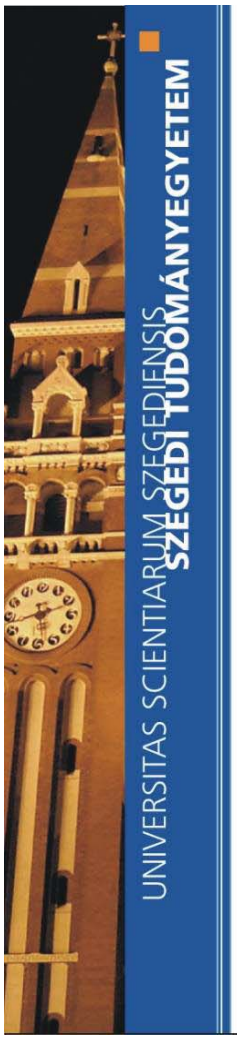


Why is innovation useful?

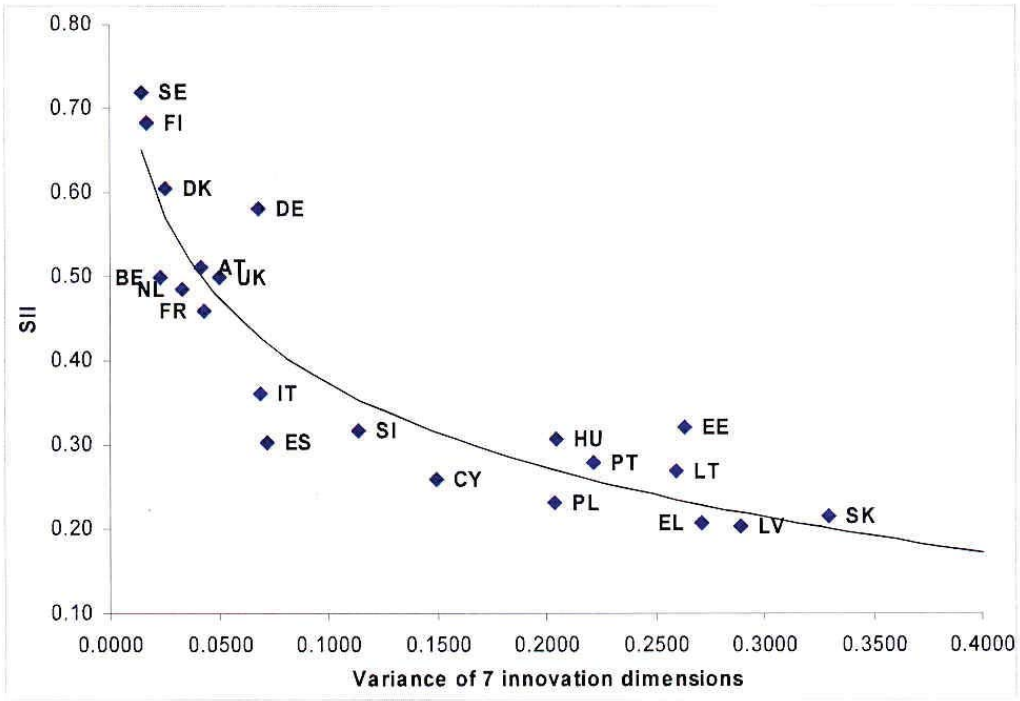
Helps in restructuring (creative destruction)

Helps in utilizing the potential of recoveries after recessions

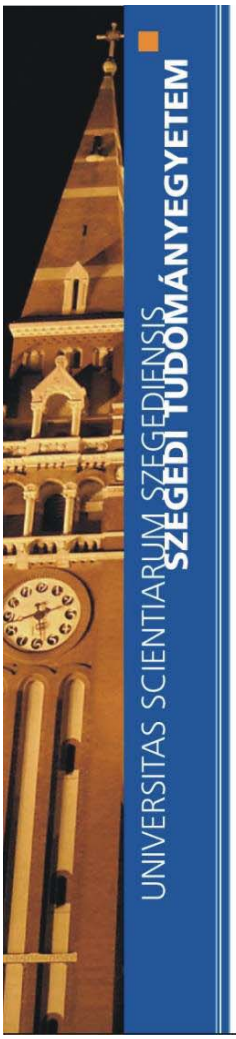
The support of innovation offers large social return (spillover effects)



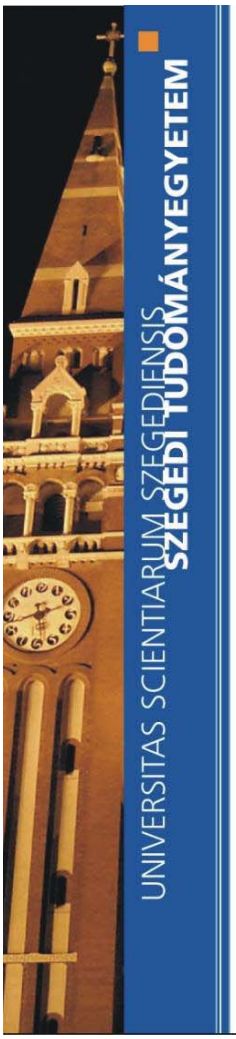
Quality Control of Innovation Systems



European Innovation Scoreboard (2008)

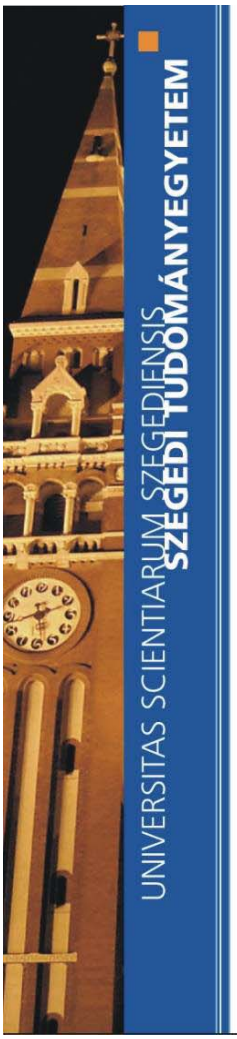


Understanding the innovation process



Linear model of innovation

Fundamental res. ⇒ applied res. ⇒ development

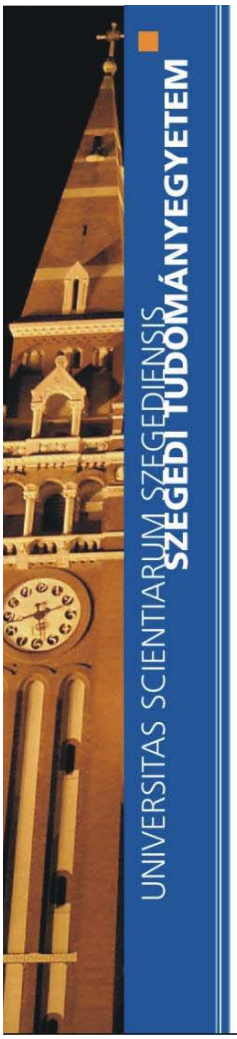


Problems

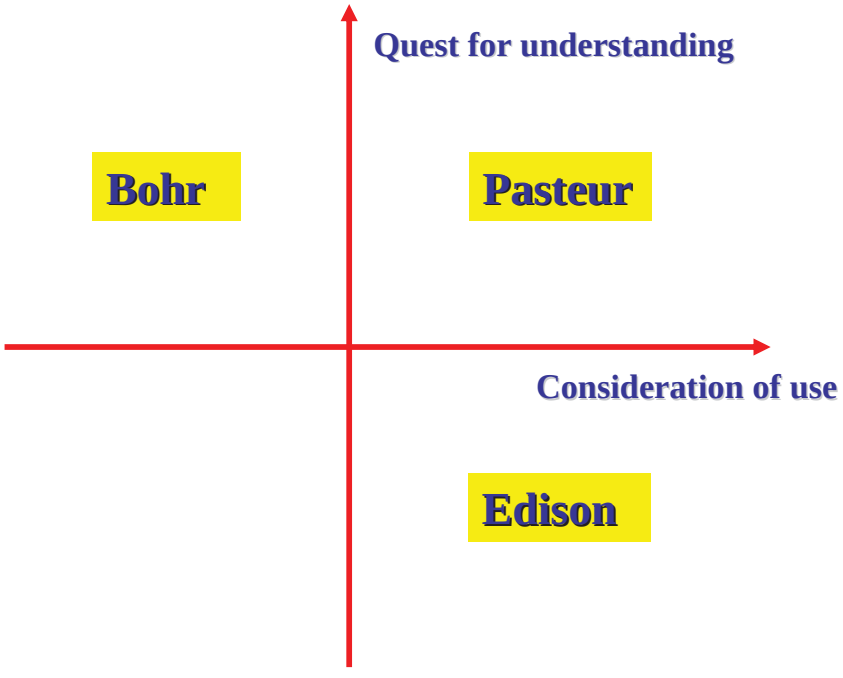
Project Hindsight (DoD, 1967-69)

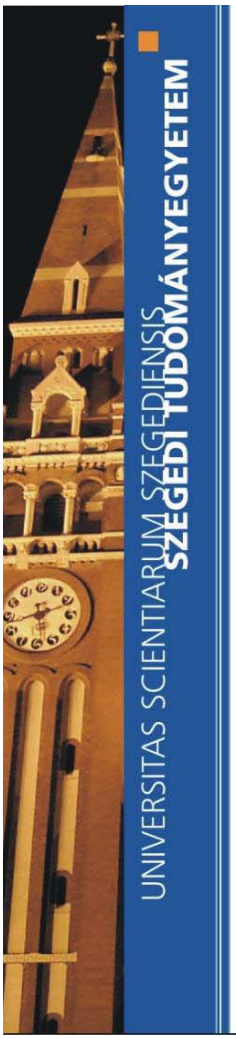
Reply: TRACES (NSF, 1968)

Where is the place for Pasteur?



Two dimensional model (D. Stokes)



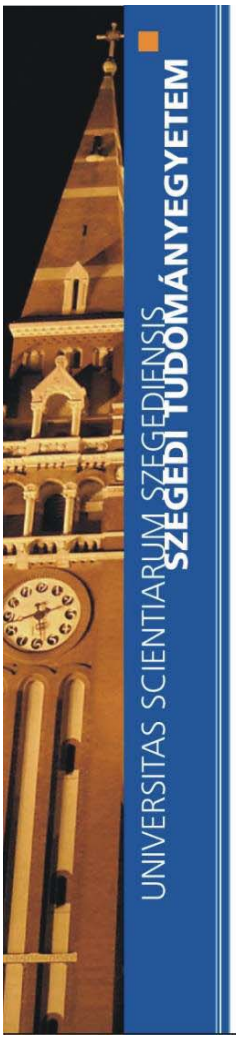


Quality control of innovation

How to assess the quality of something new?

Similarities to q.c. of research

Differences between „curiousity driven” and „problem solving” science

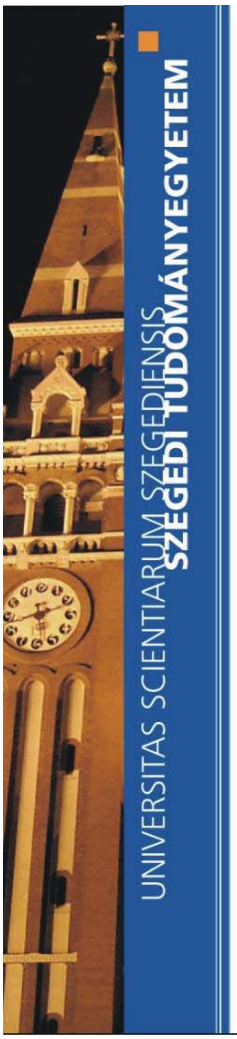


Quality control of curiousity driven science

Fudamental approach: peer assessment

Autonomy of science: peers and competition

Continuous changes (changes are often not documented)

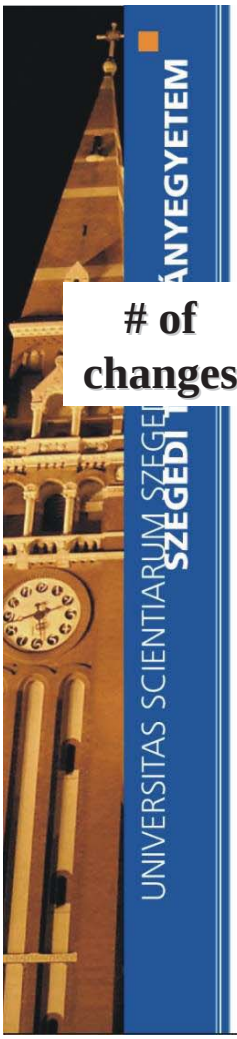


Quality control of problem solving science

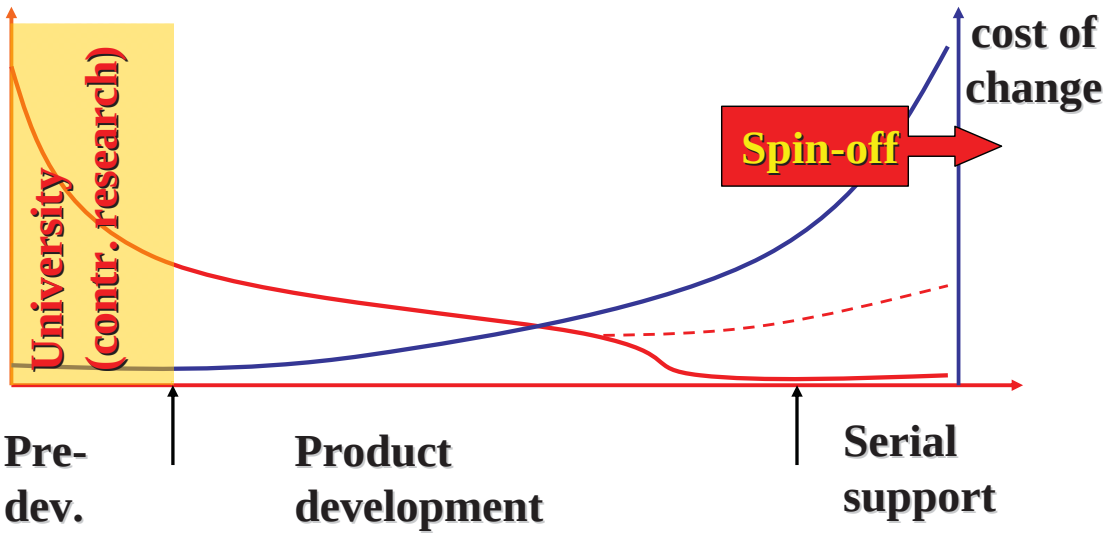
Focus on control of processes/pratices not of results

Transition to industrial QMS systems

Q. C. of clinical trials

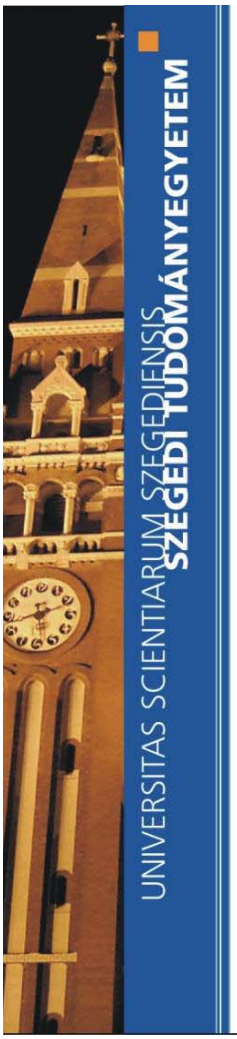


Product life cycle



Q.C. of research

Industrial QMS



The mindset difference

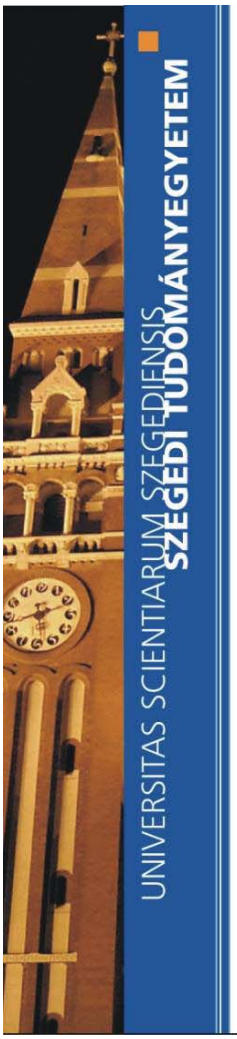
Scientist

Problem ⇒ solution

Engineer/industrialist

Problem ⇒ solution

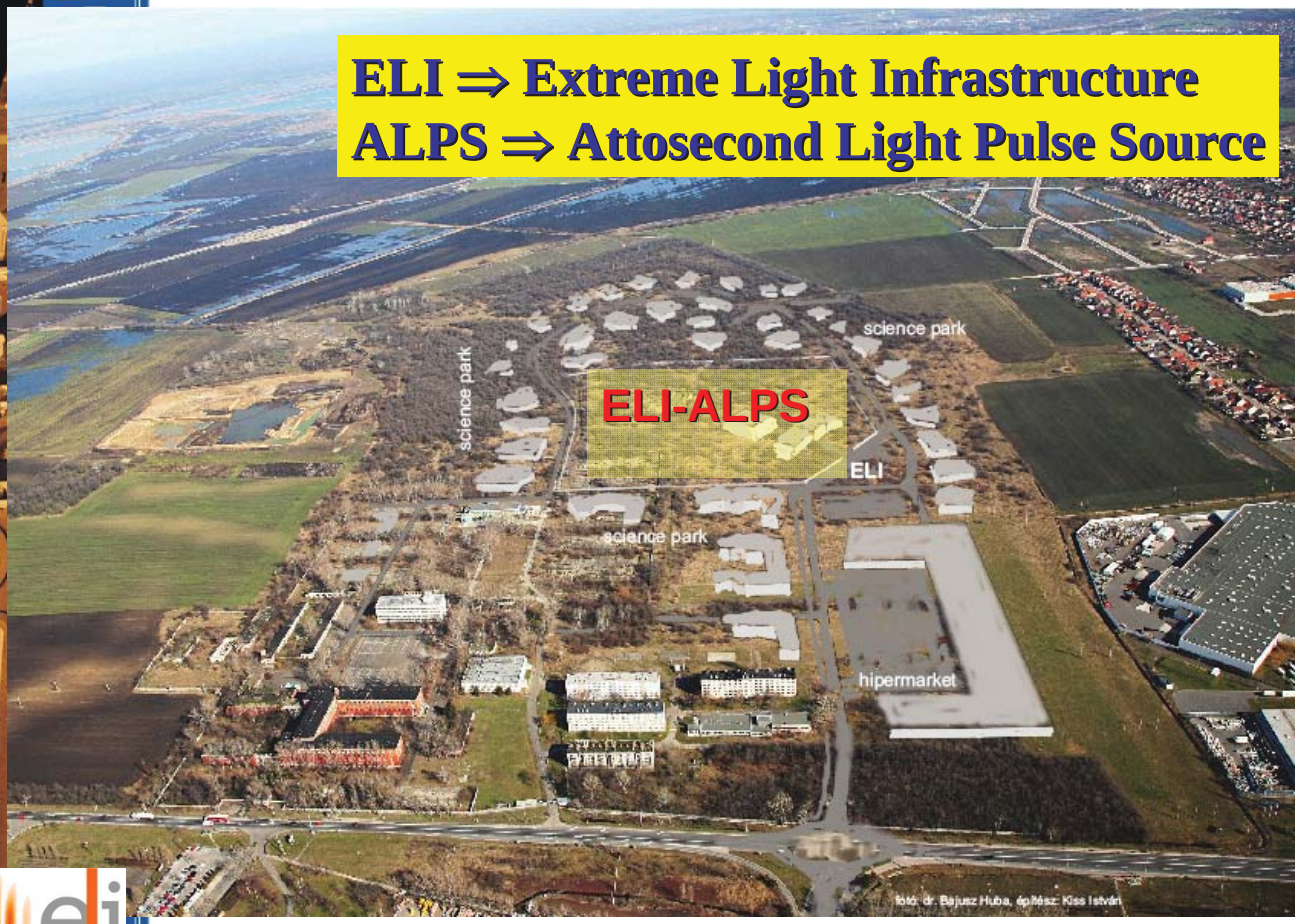
Constraints: Is it feasible for production?
Is it economically viable?
Will anybody buy it?
Does it kill your own product?
Quality control



Quality control in large scale scientific infrastructure

Extreme tight requirements

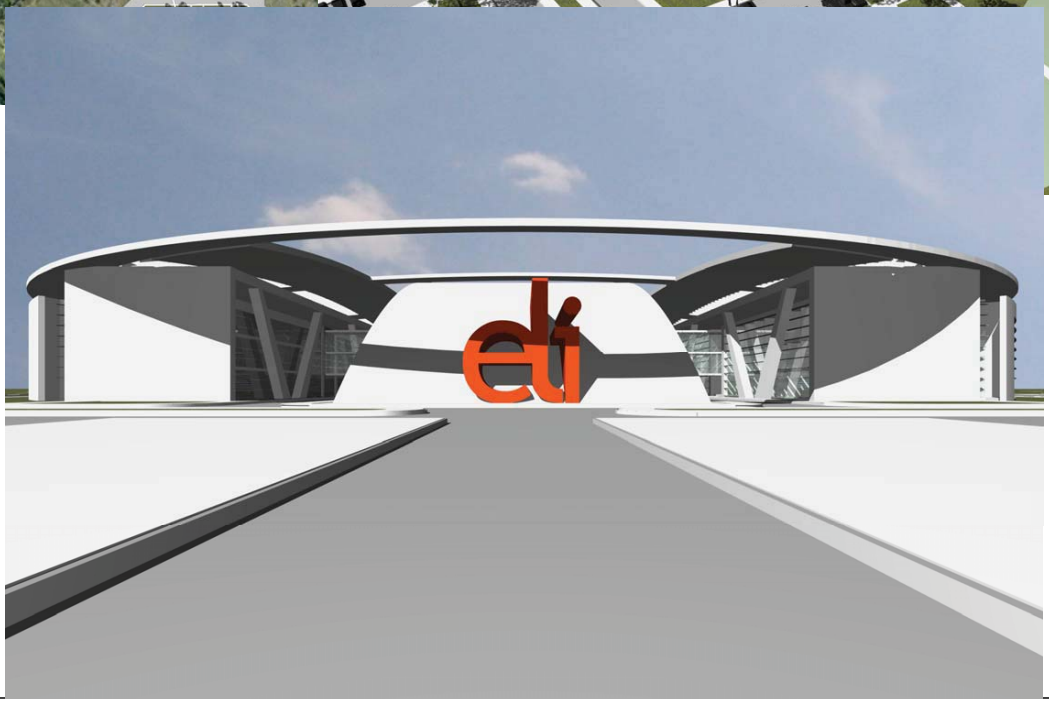
ELI ⇒ Extreme Light Infrastructure
ALPS ⇒ Attosecond Light Pulse Source



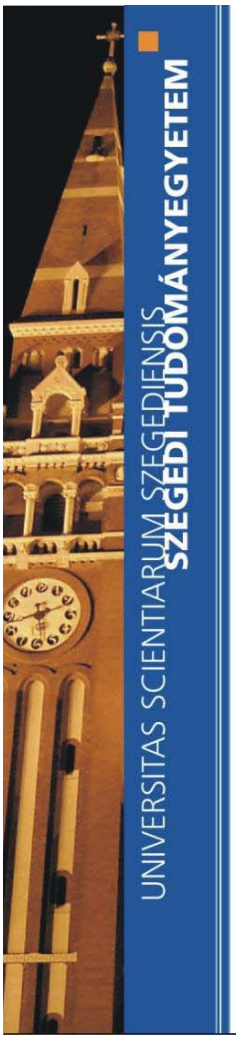
extreme light infrastructure

UNIVERSITAS SCIENTIARUM SZEGEDIENSIS
SZEGEDI TUDOMÁNYEGYETEM

ELI-ALPS: world class user facility for attoscience with applications in biomedicine, materials and nanoscience, etc
Total investment: 250 MEuro



extreme light infrastructure



Thank you for your attention!